Prefatory Note

The attached document represents the most complete and accurate version available based on original files from the FOMC Secretariat at the Board of Governors of the Federal Reserve System.

Please note that some material may have been redacted from this document if that material was received on a confidential basis. Redacted material is indicated by occasional gaps in the text or by gray boxes around non-text content. All redacted passages are exempt from disclosure under applicable provisions of the Freedom of Information Act.

Content last modified 1/16/2026.

Class I FOMC – Restricted Controlled (FR)

Report to the FOMC on Economic Conditions and Monetary Policy

Book B

Monetary Policy Alternatives

July 23, 2020

Prepared for the Federal Open Market Committee
by the staff of the Board of Governors of the Federal Reserve System

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Alternatives

Monetary Policy Alternatives

The numerous actions undertaken by the Federal Reserve since March and the uncertainty still associated with the evolution of the economic outlook continue to be central considerations for the determination of the appropriate path of monetary policy. Policymakers may perceive that their policy measures are helping to sustain the flow of credit and support accommodative financial conditions. They may judge that the accrual of additional information in coming months will help inform future changes to monetary policy actions and communications. Additionally, policymakers may want to conclude discussions on their Statement on Longer-Run Goals and Monetary Policy Strategy before modifying policy communications. Accordingly, policymakers may judge that the current stance of monetary policy—including the federal funds rate at its effective lower bound, the associated forward guidance regarding the federal funds rate, and substantial past and ongoing asset purchases—remains appropriate for the time being. In addition, policymakers may want to continue signaling their readiness to adjust policy as appropriate in the future.

A draft policy statement for the July FOMC meeting, which maintains the current target range for the federal funds rate and reiterates the Committee's existing forward guidance and asset purchase plans, is presented below.

Revisions to the Statement Language

The draft statement retains most of the language used in the June FOMC statement. The description of current economic conditions in the second paragraph has been updated to say that "Following sharp declines, economic activity and employment have picked up somewhat in recent months but remain well below their levels at the beginning of the year." This characterization cautiously acknowledges the stronger-than-expected incoming data over the intermeeting period. Additionally, financial conditions are now described as having improved "overall" and "in recent months." The addition of "overall" acknowledges that financial conditions have not shown uniform improvement. Most notably, in the July Senior Loan Officer Opinion Survey, banks reported a substantial further tightening of their lending standards across all major loan categories over the second quarter of 2020. The addition of "in recent months" clarifies that the period over which the improvements have occurred stretches back further than the previous FOMC meeting.

The third paragraph now opens with a new sentence. Against the backdrop of the recent surge in COVID-19 cases and the potential implications for the economic outlook, this sentence states that "The path of the economy will depend significantly on the course of the virus."

The characterization of interest rate policy in the third paragraph and of asset purchases in the final paragraph are unchanged from the June postmeeting statement.

RATIONALES FOR THE STATEMENT

As many states moved to reopen their economies, economic activity rebounded sharply in May and June, earlier than expected by most observers. Last month, retail sales and motor vehicle sales increased, and single-family housing starts and building permits rose notably. The reported unemployment rate fell from 14.7 percent in April to 13.3 percent in May and to 11.1 percent in June. However, after many states lifted social-distancing restrictions, the total number of COVID-19 cases surged from mid-June. Several states have responded to this surge by reimposing some restrictions, and nearly all states have slowed their reopening plans to some extent. The staff now projects real GDP to rise at an annual pace of 12 percent in the second half of the year. This projection is revised down from the pace of 15 percent forecast in the May Tealbook A. For the year as a whole, the staff now anticipates that real GDP will contract 5.6 percent, compared with a 7.1 percent drop in the previous forecast. The unemployment rate is expected to decline to 8.4 percent in December, implying that substantial resource slack in the economy will remain as the economy enters 2021.

Inflation is likely to fall short of 2 percent over the next few years, as downward pressures generated by economic slack are unlikely to abate anytime soon. Under the staff's baseline projection, core PCE inflation will be 1.7 percent at the end of 2022. Survey measures of longer-term inflation expectations are little changed from their June readings and appear consistent with PCE inflation near 2 percent. TIPS-based measures of inflation compensation are also little changed but remain below their typical range in recent years.[1]

[1] See the box "Does the Decline in Long-Horizon Inflation Compensation in 2020 Reflect a De-anchoring in Inflation Expectations?" on pages 84 and 85 of Tealbook A.

Uncertainty about both the path of the COVID-19 pandemic and its implications for economic activity is a defining feature of the current economic environment. Underscoring this uncertainty, equity market volatility remains well above typical levels and the range of professional economic forecasts is unusually wide.[2] The incoming data have done little to reduce uncertainty about the future course of the pandemic and its consequences for the economy. Policymakers may note that the staff's baseline economic forecast is predicated on the eventual containment of the pandemic and that this process will not involve a widespread reimposition of severe lockdown restrictions. However, the staff considers equally plausible an alternative scenario in which the containment efforts are unsuccessful, so that another round of intense social distancing becomes necessary and a more substantial and protracted impairment of economic activity occurs. The recent spike in cases in the United States, along with the moves toward greater mandatory restrictions in some states, could be an indication that such an outcome may be under way.

In light of the dramatic deterioration in the economic outlook since early this year, the Federal Reserve has taken numerous actions—including setting the federal funds rate at the effective lower bound, providing forward guidance about the future path of the federal funds rate, conducting substantial past and ongoing asset purchases, and implementing a range of credit and liquidity programs—to support economic activity and financial market functioning and to facilitate the flow of credit to households and businesses. In view of these actions, policymakers may judge that the stance of policy is appropriate. They may also judge that their forward guidance so far has given market participants confidence that this accommodative stance will be maintained for the next few years—a judgment consistent with responses to the latest Desk surveys and readings in financial markets. Policymakers may further observe that the coming months will see the accrual of additional information, including about the evolution of the pandemic and its economic effects as well as potential fiscal policy actions, which will help inform future changes to monetary policy actions and communications.

Policymakers may want to continue to signal their readiness to adjust policy as needed to promote their maximum employment and price stability goals. This idea is captured by the opening statement that the "Federal Reserve is committed to using its full

[2] See the table "Comparison of Staff and Outside Forecasts for Real GDP Growth" on page 23 and the box "Comparing the Staff International Growth Outlook with Other Forecasts" on pages 64 and 65 of Tealbook A.

range of tools to support the U.S. economy," as well as by the statement in the fourth paragraph that the Committee "will use its tools and act as appropriate to support the economy."

Because the economy may need support from highly accommodative monetary policy for some time, policymakers may judge that it will be important in coming months for the Committee to provide greater clarity regarding the likely path of the federal funds rate and asset purchases. Before providing additional forward guidance, however, policymakers may wish to conclude their discussions of their Statement on Longer-Run Goals and Monetary Policy Strategy. Revisions to the Statement may enhance the effectiveness of further policy measures by providing greater clarity regarding how those new decisions fit into an overall strategy designed to achieve the Committee's dual mandate.

As discussed in the box "Monetary Policy Expectations and Uncertainty," the median respondent to the Desk's July surveys of primary dealers and market participants assigns the highest odds of the first increase in the federal funds rate to the second half of 2023, and market-based measures of federal funds rate expectations imply a later expected date of the first increase. Most Desk survey respondents who provided expectations about forward guidance indicated that they do not expect a change at this meeting to the current guidance. Furthermore, the updates to the statement language in the draft statement below are not at odds with recent Federal Reserve communications. Consequently, the effect of an announcement like the draft policy statement on the expected path of short-term interest rates and on the prices of financial assets could be modest. However, market reactions are particularly difficult to gauge in the current environment, and so it is hard to anticipate with great confidence how market participants would react to an FOMC announcement along the lines of the draft policy statement.

June 2020 FOMC Statement

1. The Federal Reserve is committed to using its full range of tools to support the U.S. economy in this challenging time, thereby promoting its maximum employment and price stability goals.

2. The coronavirus outbreak is causing tremendous human and economic hardship across the United States and around the world. The virus and the measures taken to protect public health have induced sharp declines in economic activity and a surge in job losses. Weaker demand and significantly lower oil prices are holding down consumer price inflation. Financial conditions have improved, in part reflecting policy measures to support the economy and the flow of credit to U.S. households and businesses.

3. The ongoing public health crisis will weigh heavily on economic activity, employment, and inflation in the near term, and poses considerable risks to the economic outlook over the medium term. In light of these developments, the Committee decided to maintain the target range for the federal funds rate at 0 to 1/4 percent. The Committee expects to maintain this target range until it is confident that the economy has weathered recent events and is on track to achieve its maximum employment and price stability goals.

4. The Committee will continue to monitor the implications of incoming information for the economic outlook, including information related to public health, as well as global developments and muted inflation pressures, and will use its tools and act as appropriate to support the economy. In determining the timing and size of future adjustments to the stance of monetary policy, the Committee will assess realized and expected economic conditions relative to its maximum employment objective and its symmetric 2 percent inflation objective. This assessment will take into account a wide range of information, including measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial and international developments.

5. To support the flow of credit to households and businesses, over coming months the Federal Reserve will increase its holdings of Treasury securities and agency residential and commercial mortgage-backed securities at least at the current pace to sustain smooth market functioning, thereby fostering effective transmission of monetary policy to broader financial conditions. In addition, the Open Market Desk will continue to offer large-scale overnight and term repurchase agreement operations. The Committee will closely monitor developments and is prepared to adjust its plans as appropriate.

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Draft of July 2020 FOMC Statement

1. The Federal Reserve is committed to using its full range of tools to support the U.S. economy in this challenging time, thereby promoting its maximum employment and price stability goals.

2. The coronavirus outbreak is causing tremendous human and economic hardship across the United States and around the world. ~~The virus and the measures taken to protect public health have induced sharp declines in economic activity and a surge in job losses.~~ **Following sharp declines, economic activity and employment have picked up somewhat in recent months but remain well below their levels at the beginning of the year.** Weaker demand and significantly lower oil prices are holding down consumer price inflation. **Overall** financial conditions have improved **in recent months**, in part reflecting policy measures to support the economy and the flow of credit to U.S. households and businesses.

3. **The path of the economy will depend significantly on the course of the virus.** The ongoing public health crisis will weigh heavily on economic activity, employment, and inflation in the near term, and poses considerable risks to the economic outlook over the medium term. In light of these developments, the Committee decided to maintain the target range for the federal funds rate at 0 to 1/4 percent. The Committee expects to maintain this target range until it is confident that the economy has weathered recent events and is on track to achieve its maximum employment and price stability goals.

4. The Committee will continue to monitor the implications of incoming information for the economic outlook, including information related to public health, as well as global developments and muted inflation pressures, and will use its tools and act as appropriate to support the economy. In determining the timing and size of future adjustments to the stance of monetary policy, the Committee will assess realized and expected economic conditions relative to its maximum employment objective and its symmetric 2 percent inflation objective. This assessment will take into account a wide range of information, including measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial and international developments.

5. To support the flow of credit to households and businesses, over coming months the Federal Reserve will increase its holdings of Treasury securities and agency residential and commercial mortgage-backed securities at least at the current pace to sustain smooth market functioning, thereby fostering effective transmission of monetary policy to broader financial conditions. In addition, the Open Market Desk will continue to offer large-scale overnight and term repurchase agreement operations. The Committee will closely monitor developments and is prepared to adjust its plans as appropriate.

IMPLEMENTATION NOTE

A draft implementation note appears on the following pages. Struck-out text indicates language deleted from, and bold red underlined text indicates language added to, the previously issued note. Blue underlined text indicates text that links to websites.

Alternatives

Implementation Note for July 2020

Release Date: July 29, 2020

Decisions Regarding Monetary Policy Implementation

The Federal Reserve has made the following decisions to implement the monetary policy stance announced by the Federal Open Market Committee in its statement on ~~June 10~~ **July 29**, 2020:

- The Board of Governors of the Federal Reserve System voted **[** unanimously **]** to maintain the interest rate paid on required and excess reserve balances at 0.10 percent, effective ~~June 11~~ **July 30**, 2020.
- As part of its policy decision, the Federal Open Market Committee voted to authorize and direct the Open Market Desk at the Federal Reserve Bank of New York, until instructed otherwise, to execute transactions in the System Open Market Account in accordance with the following domestic policy directive:

  "Effective ~~June 11~~ **July 30**, 2020, the Federal Open Market Committee directs the Desk to:
  - Undertake open market operations as necessary to maintain the federal funds rate in a target range of 0 to 1/4 percent.
  - Increase the System Open Market Account holdings of Treasury securities, agency mortgage-backed securities (MBS), and agency commercial mortgage-backed securities (CMBS) at least at the current pace to sustain smooth functioning of markets for these securities, thereby fostering effective transmission of monetary policy to broader financial conditions.
  - Conduct term and overnight repurchase agreement operations to support effective policy implementation and the smooth functioning of short-term U.S. dollar funding markets.
  - Conduct overnight reverse repurchase agreement operations at an offering rate of 0.00 percent and with a per-counterparty limit of $30 billion per day; the per-counterparty limit can be temporarily increased at the discretion of the Chair.
  - Roll over at auction all principal payments from the Federal Reserve's holdings of Treasury securities and reinvest all principal payments from the Federal Reserve's holdings of agency debt and agency MBS in agency MBS and all principal payments from holdings of agency CMBS in agency CMBS.
  - Allow modest deviations from stated amounts for purchases and reinvestments, if needed for operational reasons.
  - Engage in dollar roll and coupon swap transactions as necessary to facilitate settlement of the Federal Reserve's agency MBS transactions."

- In a related action, the Board of Governors of the Federal Reserve System voted **[** unanimously **]** to approve the establishment of the primary credit rate at the existing level of 0.25 percent.

This information will be updated as appropriate to reflect decisions of the Federal Open Market Committee or the Board of Governors regarding details of the Federal Reserve's operational tools and approach used to implement monetary policy.

More information regarding open market operations and reinvestments may be found on the Federal Reserve Bank of New York's website.

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Monetary Policy Expectations and Uncertainty

Market-based measures of federal funds rate expectations edged down on net over the intermeeting period amid a deterioration in investor sentiment related to the surge in COVID-19 cases. Those measures now suggest that the expected federal funds rate remains below 0.25 percent until late 2024. Similarly, the median respondent to the Desk's July surveys of primary dealers and market participants assigns the highest odds to the first increase in the federal funds rate coming in the second half of 2023.

The probability distribution of the federal funds rate at the end of 2020, based on option quotes unadjusted for risk premiums, has changed little since the June FOMC meeting (figure 1). It assigns the highest probability, 40 percent, to the current target range. The same distribution assigns about 30 percent and 10 percent odds to the 0 to −0.25 percent range and to outcomes below −0.25 percent, respectively. In contrast with the relatively dispersed option-implied distribution, the average respondent to the Desk's July surveys is close to certain that the federal funds rate will end 2020 in the current target range (figure 2). The difference between the option- and survey-based distributions continues to suggest that market-implied probabilities of negative rate outcomes reflect investors' willingness to pay a premium for options that provide a payoff in adverse scenarios associated with negative rates.

Looking further ahead, the expected path of the federal funds rate, as implied by OIS quotes and unadjusted for term premiums, has declined modestly (the blue line in figure 3), and now remains below 0.25 percent until late 2024.[1] The expected path implied by a staff term structure model that adjusts for term premiums (the purple line) has shifted lower and now remains below 0.25 percent until the second half of 2023.[2] The expected path implied by a staff macro-finance model (the green line) reaches 0.25 percent earlier, in the second quarter of 2022, although the implied pace of rate increases is nonetheless very gradual.

Similarly, the median respondent to the Desk's July surveys continues to view the most likely path of the federal funds rate as remaining in its current range until the second half of 2023 (the black crosses show the path through the end of 2022).[3] The

[1] Market-implied forward rates referring to mid-2021 through 2022 remained slightly negative. However, as discussed above, financial market quotes reflect risk premiums and likely overstate the probability that investors attach to these negative federal funds rate outcomes.

[2] With OIS rates close to zero, estimates from this model are particularly uncertain and can be quite sensitive to small changes in the data. Accordingly, the large shift in the path for the federal funds rate since the June meeting implied by this model should be interpreted cautiously.

[3] The Desk surveys asked respondents to provide their views about the most likely path of the federal funds rate through the end of 2022. If a respondent did not indicate a rate increase by the

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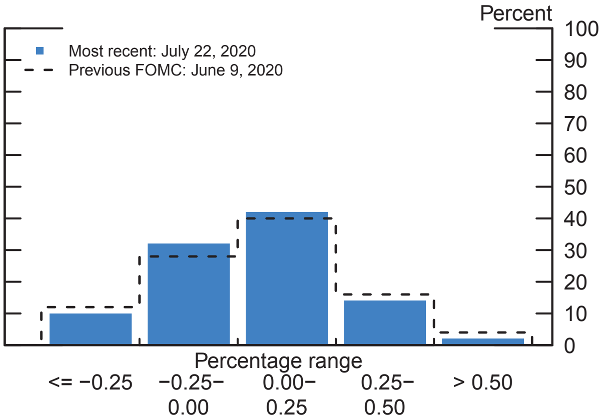
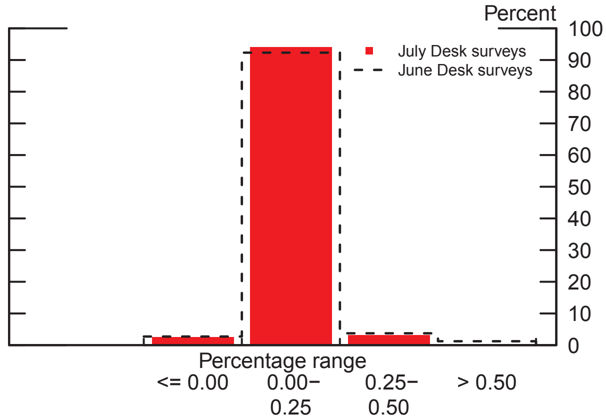
Figure 1: Market−Implied Probability Distribution of the Federal Funds Rate, Year−End 2020



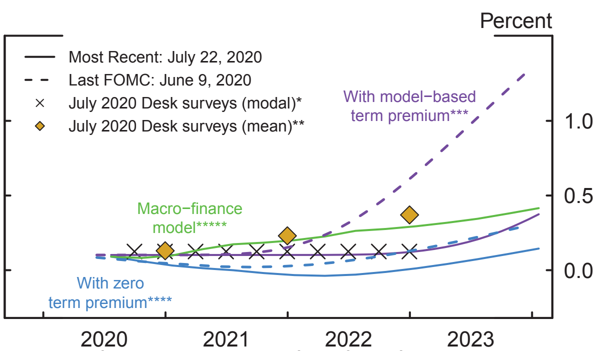
Note: Estimated from federal funds futures options, not adjusted for risk premiums. The distribution for January 2021 is used to provide a read on the distribution at the end of 2020.
Source: CME Group; Board staff calculations.

Figure 2: Desk Surveys Probability Distribution of the Federal Funds Rate, Year−End 2020



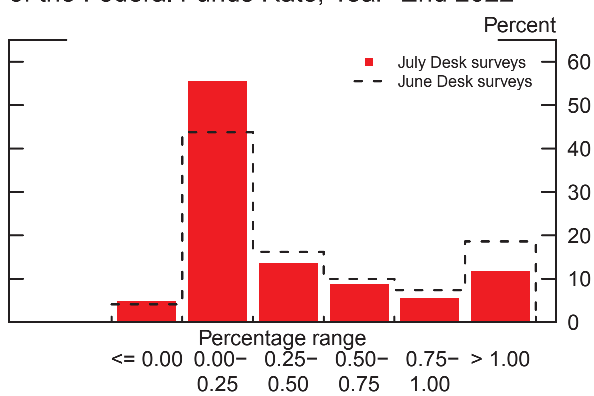
Note: Probabilities are the averages of the probabilities assigned by respondents to the Survey of Market Participants and Survey of Primary Dealers to different ranges of the federal funds rate at the end of 2020.
Source: FRBNY.

Figure 3: Federal Funds Rate Projections



* Median of respondents' modal paths for the federal funds rate.
** Estimated from respondents' unconditional year−end probability distributions.
*** Adjusting for premiums using a term structure model based on Priebsch (2017).
**** Estimated using overnight index swap quotes with a spline approach and a term premium of 0 basis points.
***** Macro−finance model path is estimated by averaging over regressions of survey−OIS gaps on the covariances between real and nominal variables based on Diercks and Carl (2019).
Source: Bloomberg; Board staff calculations; FRBNY.

Figure 4: Desk Surveys Probability Distribution of the Federal Funds Rate, Year−End 2022



Note: Probabilities are the averages of the probabilities assigned by respondents to the Survey of Market Participants and Survey of Primary Dealers to different ranges of the federal funds rate at the end of 2022.
Source: FRBNY.

averages of respondents' mean expectations (the gold diamonds) increase gradually, consistent with uncertainty about the federal funds rate that is tilted to the upside at the effective lower bound. The mean expectations from the surveys are slightly lower than at the time of the June surveys (not shown), reflecting a modest decrease in the probability assigned to outcomes above the current target range. Indeed, figure 4 shows that the distribution for the federal funds rate at the end of 2022 has become a bit more concentrated at the current target range.

The Desk surveys also asked respondents for their estimates of the values of various macroeconomic variables at the time of the first increase in the federal funds rate. The median respondent expected that the unemployment rate will be 4.5 percent, headline 12-month PCE inflation will be 2.1 percent, the labor force participation rate will be 63 percent, and the total change in the level of real GDP relative to the fourth quarter of 2019 will be 5 percent. Figures 5 and 6 show a wide dispersion across survey respondents in the expected timing of liftoff, and considerable dispersion of the unemployment rate and PCE inflation rate at the time of liftoff. These figures show that respondents who expect a later increase in the federal funds rate estimate that the unemployment rate will be lower and inflation higher at that time.

When asked for their estimate of the most likely timing for a change to the Committee's forward guidance for the federal funds rate, only three out of 53 respondents in the July surveys assigned the highest odds to a change at the upcoming meeting. The September meeting was seen as the most likely time for a change, as indicated by 35 respondents. Several respondents also suggested that they saw at least some possibility of the Committee introducing a program of yield caps or targets.

Figure 7 shows measures of the longer-run expected federal funds rate. A straight read of forward rates implied by the prices of Treasury securities (the blue line) suggests that investors' current expectation for the average federal funds rate 5 to 10 years ahead is about 1 percent. This measure has declined about 10 basis points since the time of the June meeting, and remains near the lowest level since the beginning of the series in 1971. Adjusting for term premiums using various staff term structure models (with the light-red-shaded region showing a range of four such model estimates) suggests that 5-to-10-year-ahead expectations are significantly above the unadjusted forward rates, at between 2.2 and 2.4 percent. The average longer-run forecast from the June Blue Chip survey (the yellow diamonds) and the median forecast from the latest Desk surveys (the green diamonds) were 2.25 percent and 2.0 percent, respectively, close to the lower end of the model-implied range.

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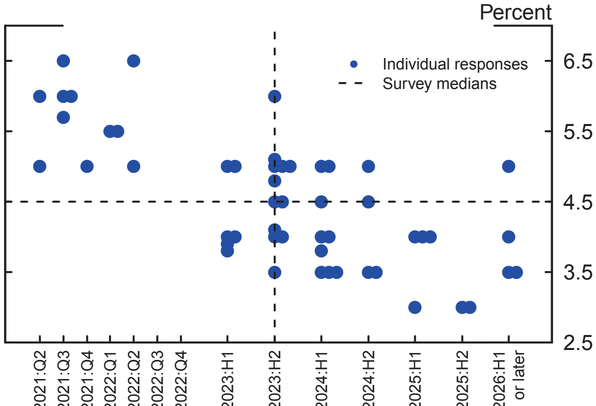
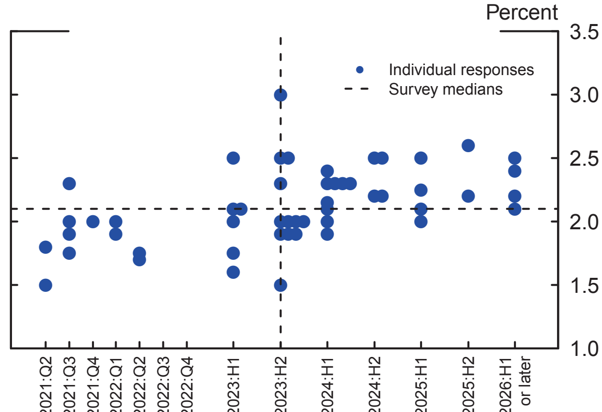
end of 2022, they were asked a separate question about the earliest half-year period during which their modal expectation for the federal funds rate is above the current target range. This additional information enables us to infer that the median respondent continues to view the most likely path of the federal funds rate as being flat until the second half of 2023.

Figure 5: Most Likely Timing of and Unemployment Rate at First Rate Increase



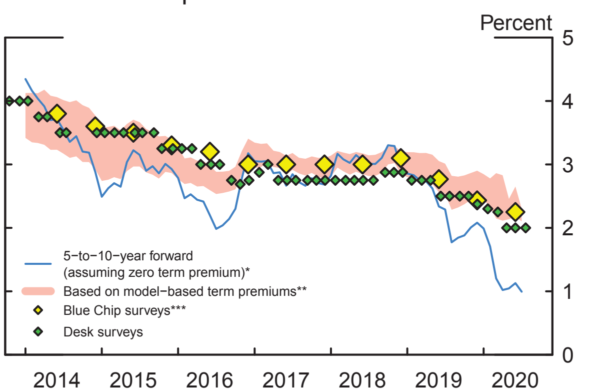
Note: Based on responses to the July 2020 Desk surveys. Respondents were asked for their modal expectations regarding the timing of the first increase in the federal funds rate, as well as their estimate of the unemployment rate at the time of the first increase. When multiple data points coincide, some are offset slightly along the date axis to ensure they are all visible.
Source: FRBNY; Board staff calculations.

Figure 6: Most Likely Timing of and PCE Inflation Rate at First Rate Increase



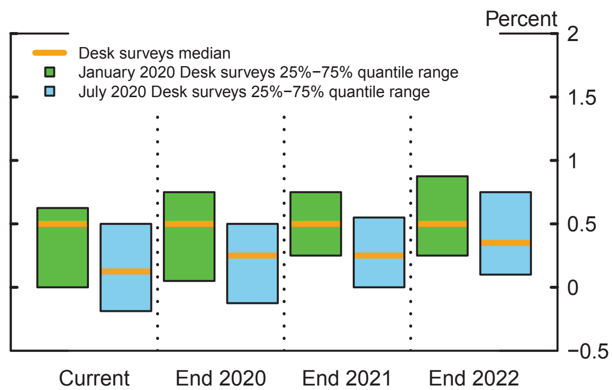
Note: Based on responses to the July 2020 Desk surveys. Respondents were asked for their modal expectations regarding the timing of the first increase in the federal funds rate, as well as their estimate of the 12−month Headline PCE inflation rate at the time of the first increase. When multiple data points coincide, some are offset slightly along the date axis to ensure they are all visible.
Source: FRBNY; Board staff calculations.

Figure 7: Measures of Longer−Run Federal Funds Rate Expectations



* Monthly average 5−to−10−year forward rate derived from prices of Treasury securities.
** Monthly average 5−to−10−year forward rate adjusted for four alternative model−based term premium estimates using Kim and Wright (2005), D'Amico, Kim, and Wei (2018), Kim and Priebsch (2019), and Meldrum (2019).
*** Most recent longer−run survey value is from the June 2020 Blue Chip survey.
Note: Forward rates and term structure model estimates for July 2020 are based on values through July 22.
Source: Blue Chip; FRBNY; Board staff calculations.

Figure 8: Desk Surveys Estimates of the Neutral Real Federal Funds Rate

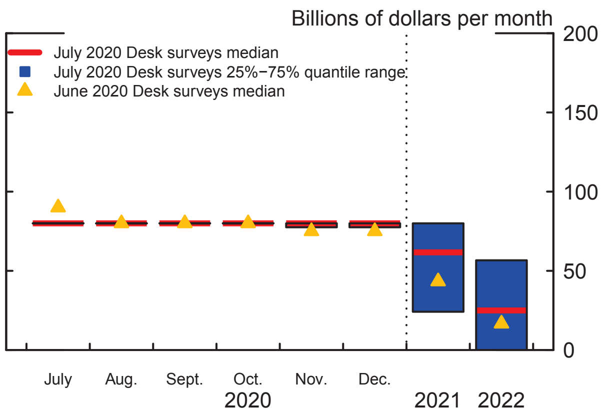


Note: Based on responses to the January 2020 and July 2020 Desk surveys.
Source: FRBNY.

The Desk surveys also asked respondents for their estimates of the current and future levels of the neutral real federal funds rate. Figure 8 shows that the median estimate for the current neutral rate was 0.125 percent in the July surveys, down from its pre-pandemic estimate of 0.5 percent at the time of January 2020 surveys, when this question was last asked. The median respondent revised the estimates for end-2020, end-2021, and end-2022 to 0.25 percent, 0.25 percent, and 0.35 percent, respectively, down from their previous levels of 0.5 percent at the time of the January meeting.

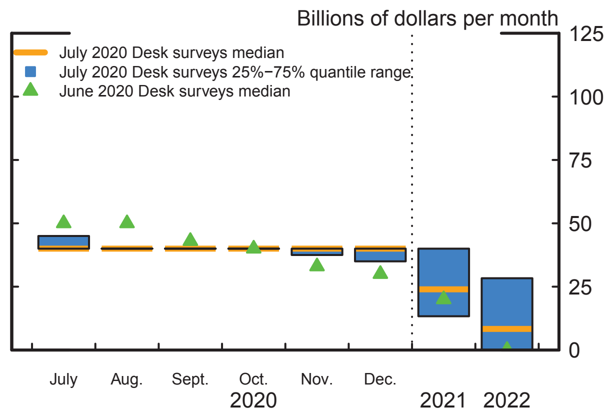
Figures 9 and 10 show the medians and interquartile ranges of the individual survey respondents' expectations for the Desk's monthly purchases of U.S. Treasury securities and agency mortgage-backed securities (MBS), net of reinvestment, for each month from July 2020 to the end of the year, and over 2021 and 2022. The median survey respondent expects monthly net U.S. Treasury and agency MBS purchases of $80 and $40 billion, respectively, through year-end, similar to the corresponding values in the June surveys, and close to the monthly pace implied by recent purchase amounts. Of note, the dispersion of expectations for 2020 narrowed materially relative to the June surveys (not shown). Respondents generally expect the pace of purchases of both U.S. Treasury securities and agency MBS to slow in 2021 and 2022, although the median expectation is higher than at the time of the June surveys. The dispersion of expectations increases substantially beyond the end of 2020. Return to Alternatives text

Figure 9: Expected Purchases of Treasury Securities Net of Reinvestments



Note: Values for 2021 and 2022 are monthly averages calculated from respondents' expectations for total purchases in those years.
Source: FRBNY.

Figure 10: Expected Purchases of Agency MBS Net of Reinvestments



Note: Values for 2021 and 2022 are monthly averages calculated from respondents' expectations for total purchases in those years.
Source: FRBNY.

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Balance Sheet and Income Projections

The staff has prepared projections of the Federal Reserve's balance sheet and the associated income statement, taking as given the economic and interest rate projections in Tealbook A. Given the steps taken to alleviate strains in financial markets brought about by the COVID-19 pandemic, the size of the Federal Reserve's balance sheet is projected to remain elevated for a number of years, reflecting the lasting effects of the recent policy actions. The balance sheet projections are highly uncertain because they depend on the future course of the economy, Federal Reserve policy actions, and take-up at the various facilities put in place to support the flow of credit to households, businesses, and state and local governments.

Total Assets. Total assets were approximately \$7 trillion at the end of June 2020 and are projected to increase to roughly \$7.5 trillion later this year, an all-time high (see the top-left panel in the exhibit titled "Total Assets and Selected Balance Sheet Items").[1] Subsequently, total assets are projected to decline gradually over the next several years, as balances in the facilities decline. Thereafter, the decline accelerates as the Treasury securities and agency MBS eventually roll off the balance sheet until the reserve balances reach the assumed level of \$2 trillion in 2026:Q2.

As a share of nominal GDP, total assets at the end of June 2020 were approximately 36 percent and are projected to stay around that ratio over the next few quarters, with the expected rebound in nominal GDP offsetting the increase in total assets (see the bottom-left panel of the exhibit). After a gradual decline, total assets are projected to level off at about 23 percent of nominal GDP by mid-2026.

SOMA Portfolio. At the end of June 2020, \$6.1 trillion of securities were held outright in the SOMA portfolio, consisting of \$4.2 trillion of Treasury securities and

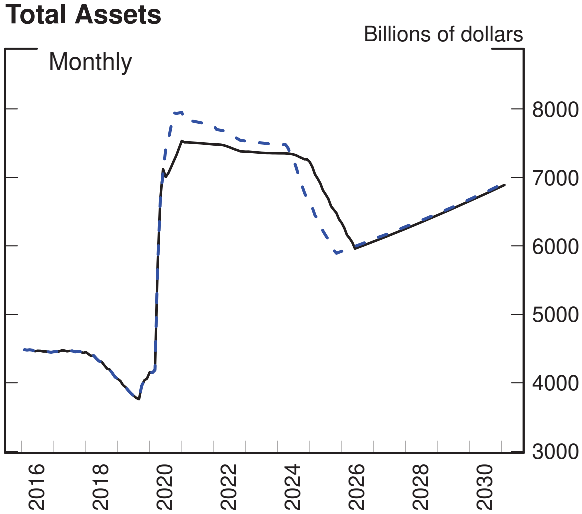
[1] In response to the financial and economic disruptions caused by the COVID-19 pandemic, the Federal Reserve has eased the stance of monetary policy and has deployed various tools to promote the smooth functioning of financial markets. Specifically, the Federal Reserve purchased Treasury securities and agency residential and commercial MBS, expanded repo operations and central bank liquidity swap lines, and introduced a number of credit and liquidity facilities. As a result of these actions, the size of the Federal Reserve's balance sheet increased from \$4.2 trillion at the beginning of 2020 to a peak of \$7.2 trillion at the beginning of June 2020. Since then, total assets fell more than \$200 billion by early July 2020, primarily driven by the runoff in liquidity provided through repo operations, discount window lending, and central bank liquidity swaps.

Balance Sheet & Income

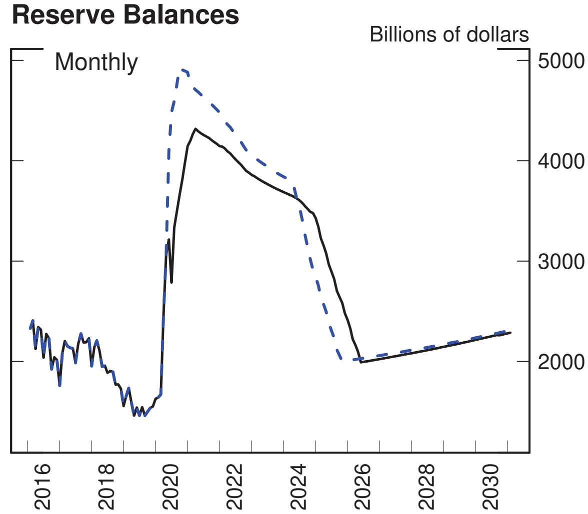
Total Assets and Selected Balance Sheet Items

July Tealbook baseline — June Tealbook baseline

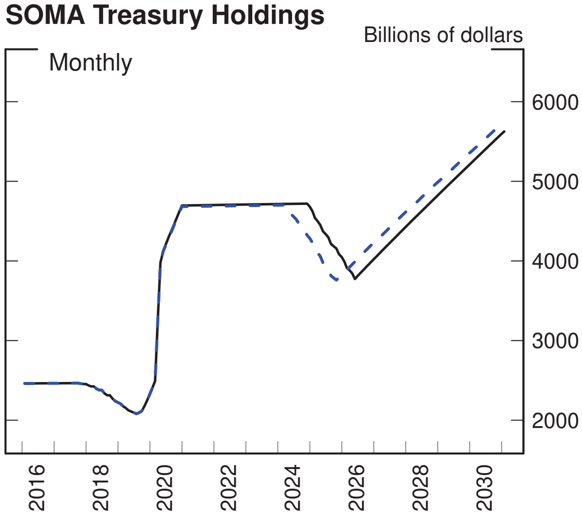
Total Assets



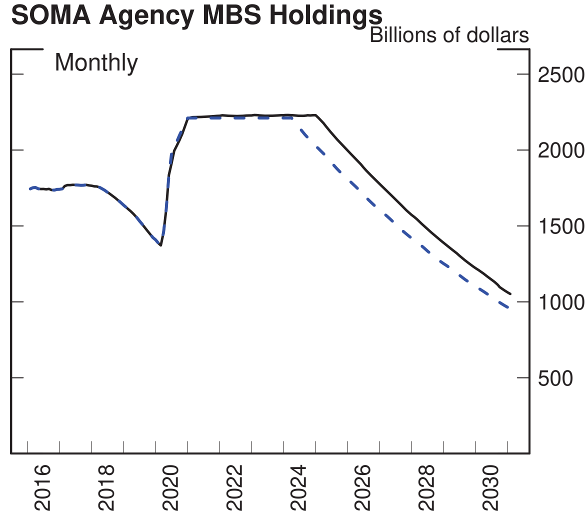
Reserve Balances



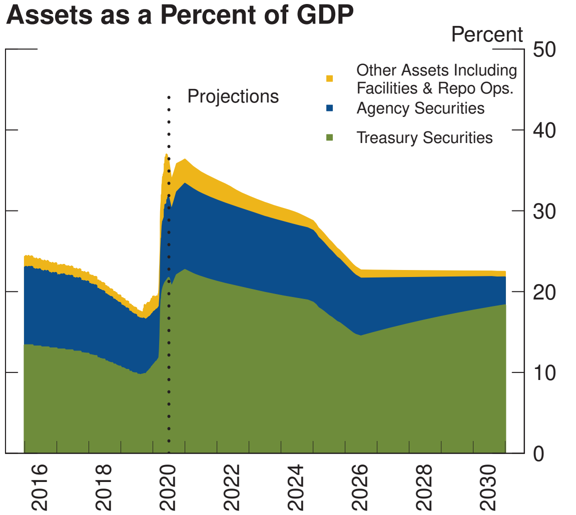
SOMA Treasury Holdings



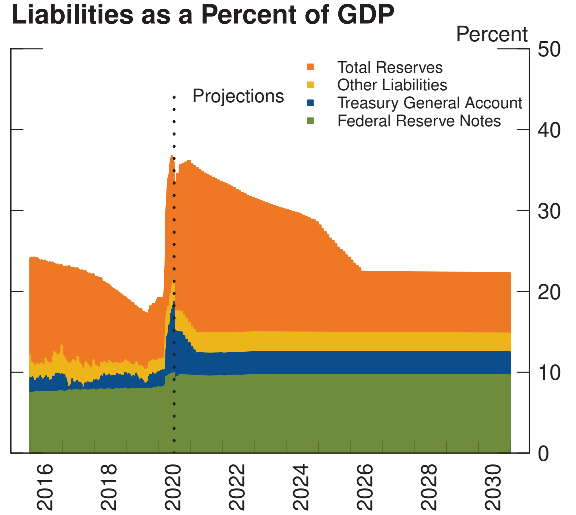
SOMA Agency MBS Holdings



Assets as a Percent of GDP



Liabilities as a Percent of GDP



$1.9 trillion of agency securities (see the exhibit titled "Federal Reserve Balance Sheet Month-end Projections—July Tealbook"). As in the June Tealbook B, the staff assumes that increases in holdings of Treasury securities and agency MBS continue at the current pace through December 2020.[2] Specifically, the staff assumes monthly increases in holdings of Treasury securities and agency MBS of $80 billion and $40 billion, respectively, through December, and no increases thereafter.[3,4,5]

The staff continues to assume that maturing Treasury securities will be reinvested at auction and that principal received on agency MBS will be fully reinvested into agency MBS until the federal funds rate reaches 1.25 percent. This level is projected to be reached in 2024:Q4, two quarters later than projected in the previous Tealbook. Subsequently, Treasury securities and agency MBS roll off the balance sheet as they mature. The roll-off period is assumed to conclude when reserve balances reach about $2 trillion.[6] This level is projected to be reached in 2026:Q2, two quarters later than in the previous Tealbook B. Thereafter, maturing Treasury securities are reinvested at auction, while principal payments received on agency MBS are reinvested into Treasury securities.[7] In addition, reserve management purchases of Treasuries are assumed to expand the SOMA in line with trend increases in the demand for reserves and in other Federal Reserve liabilities.

[2] The economic projections in the May Tealbook A were predicated on SOMA purchases through June 2020 whereas the balance sheet projections in the June Tealbook B were predicated on SOMA purchases through the end of 2020.

[3] The staff assumes that the maturity distribution of the Treasury purchases will be broadly the same as that of the purchases that have occurred since March 15, which are distributed across the curve and exclude bills.

[4] Unless otherwise noted, all numerical figures here and henceforth for "MBS" refer to agency residential MBS. Agency CMBS purchases have been small to date, and the staff assumes that the holdings of these securities will remain fixed at their end-of-June level of $9 billion before rolling off the balance sheet completely by 2030.

[5] The median respondent to the Desk's July 2020 surveys of primary dealers and market participants forecasted net monthly purchases of $80 billion and $40 billion in Treasury securities and agency MBS, respectively, for the remainder of the year. The median respondent forecasted that purchases of Treasury securities and agency MBS will continue until at least 2022, though at a diminished pace.

[6] The level of $2 trillion was chosen because it corresponds to a level at which reserves were projected to be consistent with an ample-reserves regime in the March 2020 Tealbook before the Federal Reserve began to take policy actions in response to the COVID-19 pandemic.

[7] The staff assumes that reinvestments of maturing Treasury securities will continue to be directed toward newly issued securities at Treasury auctions in proportion to the maturity distribution of Treasury debt issued at the time of reinvestment.

Federal Reserve Balance Sheet
Month-end Projections – July Tealbook
(Billions of dollars)

	Historical*			Projected				
	Sep 2017	Feb 2020	Jun 2020	Dec 2020	Dec 2021	Dec 2023	Dec 2025	Dec 2030
Total assets	4,460	4,158	7,006	7,533	7,481	7,352	6,333	6,870
Selected assets								
Securities held outright	4,240	3,863	6,124	6,903	6,930	6,946	6,047	6,661
U.S. Treasury securities	2,465	2,489	4,211	4,696	4,702	4,714	4,049	5,596
Agency securities	1,775	1,374	1,914	2,207	2,228	2,232	1,998	1,065
Loans and other credit extensions	6	0	350	219	177	82	0	0
Facilities	2	0	116	193	177	82	0	0
Discount window	0	0	7	0	0	0	0	0
Central bank liquidity swaps	4	0	227	26	0	0	0	0
Repurchase agreements	0	126	58	0	0	0	0	0
Total liabilities	4,419	4,119	6,967	7,494	7,442	7,309	6,286	6,811
Selected liabilities								
Federal Reserve notes	1,532	1,753	1,921	1,987	2,110	2,338	2,506	2,950
Reverse repurchase agreements	557	229	233	238	255	279	299	352
Deposits	2,323	2,131	4,690	5,262	5,070	4,684	3,473	3,499
Reserve balances held by depository institutions	2,073	1,691	2,787	4,146	4,145	3,687	2,415	2,281
U.S. Treasury, General Account	159	357	1,722	834	633	692	742	873
Other deposits	91	83	181	282	292	305	316	345
Total capital**	41	39	39	39	39	43	47	59

Source: Federal Reserve H.4.1 daily data and staff calculations.
Note: Components may not sum to totals due to rounding.
*September 2017 corresponds to the last month-end before the initiation of the normalization program; February 2020 corresponds to the last month-end before the initiation of Federal Reserve actions and plans designed to improve market functioning.
**Total capital includes capital paid-in and capital surplus accounts.

Facilities and Repo Operations. The staff has revised down projections for take-up at the facilities and other Federal Reserve operations, in light of the relatively low take-up seen at the facilities thus far amid improvements in market conditions (see the exhibit titled "Outstanding Balances in Facilities and Operations"). Specifically, the staff assumes that the outstanding amounts under the discount window, central bank liquidity swaps, the Primary Dealer Credit Facility (PDCF), the Money Market Mutual Fund Liquidity Facility (MMLF), and the Commercial Paper Funding Facility (CPFF) do not increase above their end-of-June values, and gradually taper off starting in July 2020. For the Term Asset-Backed Securities Loan Facility (TALF), Paycheck Protection Program Liquidity Facility (PPPLF), Primary Market Corporate Credit Facility (PMCCF), Secondary Market Corporate Credit Facility (SMCCF), Municipal Liquidity Facility (MLF), and Main Street Lending Program (MSLP), the staff assumes that credit outstanding peaks in September 2020 and remains constant at that level for several years before gradually tapering off.[8] Finally, the amount of outstanding repo operations has been revised down and is assumed to remain at zero for the entire forecast horizon. Under these assumptions, the total balances across all facilities and temporary operations peaked at around $750 billion in May 2020, declined to roughly $400 billion in June 2020, and are projected to be about $300 billion in September 2020.[9,10]

Reserve Balances. At the end of June 2020, the level of reserve balances stood at about $2.8 trillion. The staff projects reserve balances to reach nearly $4.3 trillion in early 2021, reflecting the assumptions of further asset purchases and reductions in balances maintained in the Treasury General Account (TGA) (see the upper-right panel in the exhibit titled "Total Assets and Selected Balance Sheet Items"). The peak level of reserves is projected to be significantly lower than the projected peak in the June Tealbook B, as a result of a TGA path that is revised higher in the near term and downward revisions to expected outstanding balances in the facilities and repo operations

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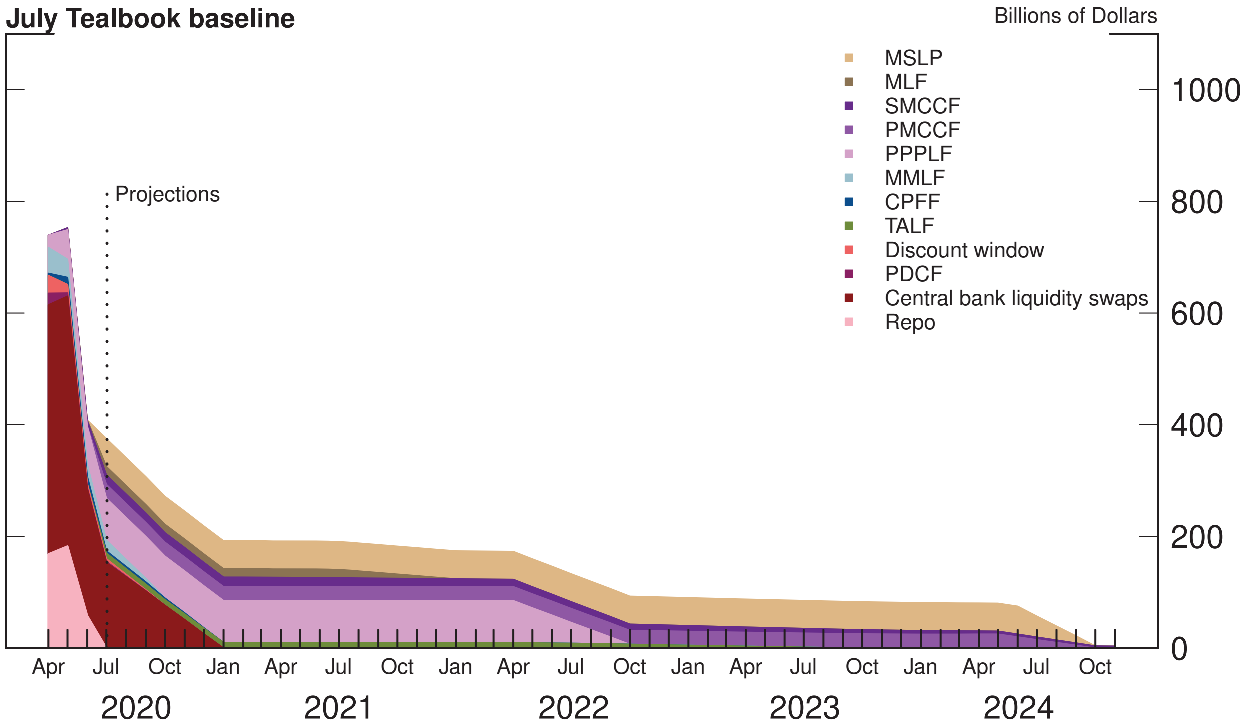
[8] There is considerable uncertainty about the take-up in the facilities, and our assumptions influence both the peak size of the balance sheet and, potentially, the subsequent timing of normalization. If the economy were to deteriorate, take-up at these facilities could be materially larger than currently assumed.

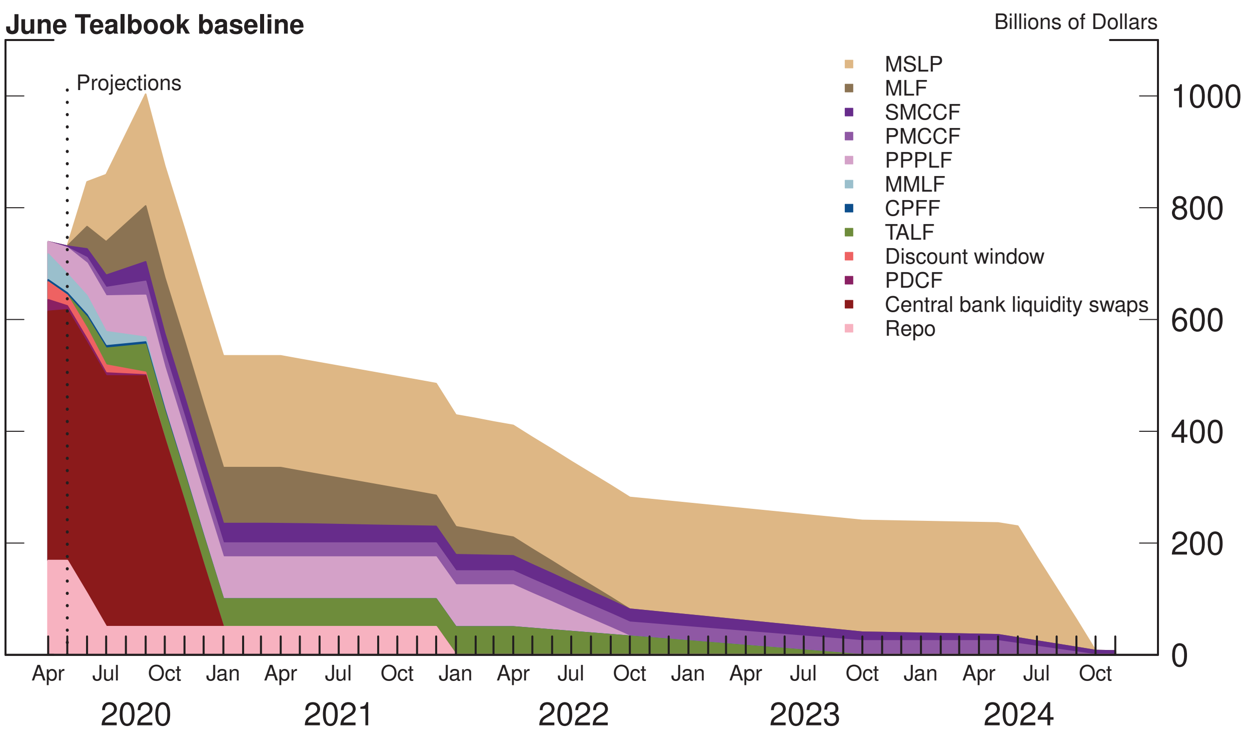
[9] In the June Tealbook B, the staff assumed a peak of $1 trillion, occurring in September 2020.

[10] The median respondent to the Desk's July 2020 surveys of primary dealers and market participants forecasted total outstanding balances across all facilities and operations of $440 billion on September 30, 2020. This amount is approximately $1.2 trillion lower than projected by the median respondent to the June 2020 surveys.

Balance Sheet & Income

Outstanding Balances in Facilities and Operations





Note: The following facilities are abbreviated above: Primary Dealer Credit Facility (PDCF), Term Asset–Backed Securities Loan Facility (TALF), Commercial Paper Funding Facility (CPFF), Money Market Mutual Fund Liquidity Facility (MMLF), Paycheck Protection Program Liquidity Facility (PPPLF), Primary Market Corporate Credit Facility (PMCCF), Secondary Market Corporate Credit Facility (SMCCF), Municipal Liquidity Facility (MLF), Main Street Lending Program (MSLP).

(as discussed above).[11] Over the next five years or so, reserve balances are projected to fall gradually as non-reserve liabilities grow in line with nominal GDP and the use of facilities declines.[12] The pace of decline in reserves steps up in early 2025 as maturing Treasury securities and agency MBS begin to roll off the balance sheet. This higher pace continues until mid-2026, when reserves reach their assumed minimum level of about $2 trillion. Thereafter, reserves are projected to grow in line with nominal GDP.

Duration. As shown in the exhibit titled "Projections for the Characteristics of SOMA Treasury Securities Holdings," the path for the weighted-average duration of the SOMA Treasury portfolio is little changed from the June Tealbook B. The weighted average duration is projected to increase to a maximum of 6.5 years in 2026.[13] Subsequently, the average duration declines to about 5 years by 2030.[14] The SOMA Treasury portfolio attains its assumed longer-run composition, consisting of one-third Treasury bills, in 2033:Q4, two quarters later than in the previous Tealbook B.

Total Term Premium Effect. As shown in the table "Projections for the 10-Year Treasury Total Term Premium Effect (TTPE) of the SOMA Portfolio," the securities held in the SOMA portfolio are estimated to be reducing the term premium embedded in the 10-year Treasury yield by 240 basis points in the current quarter. In comparison with the

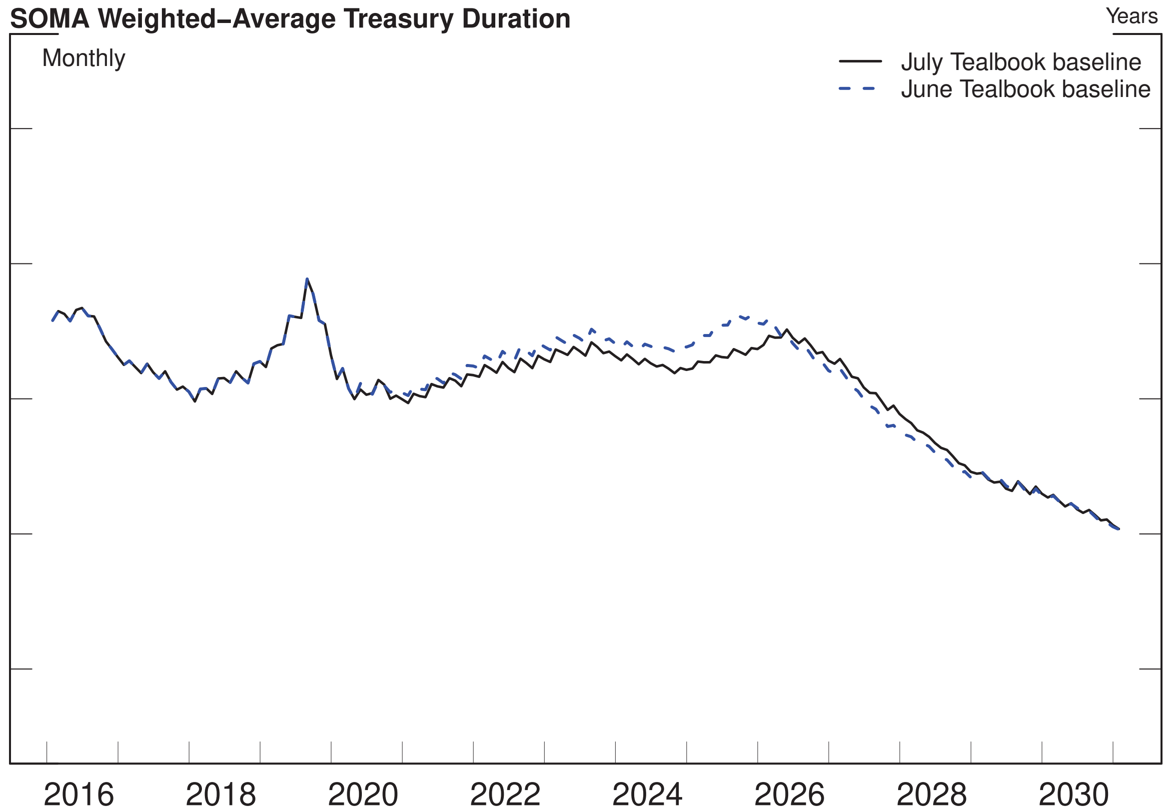
[11] Because the elevated TGA balance has been more persistent than expected, the staff revised its TGA projections to include a gradual taper phase where the TGA balance declines to $600 billion over the next nine months as outlays related to the CARES Act occur. Thereafter, growth of the TGA resumes in line with nominal GDP, as in the previous projection. Compared with previous Tealbooks, the path for the TGA is little changed in the longer run but is significantly higher in the near term. Finally, the evolution of the TGA is highly uncertain due to the uncertainty regarding the timing of outlays, the enactment of another fiscal stimulus bill, and the termination of the suspension of the debt limit next summer.

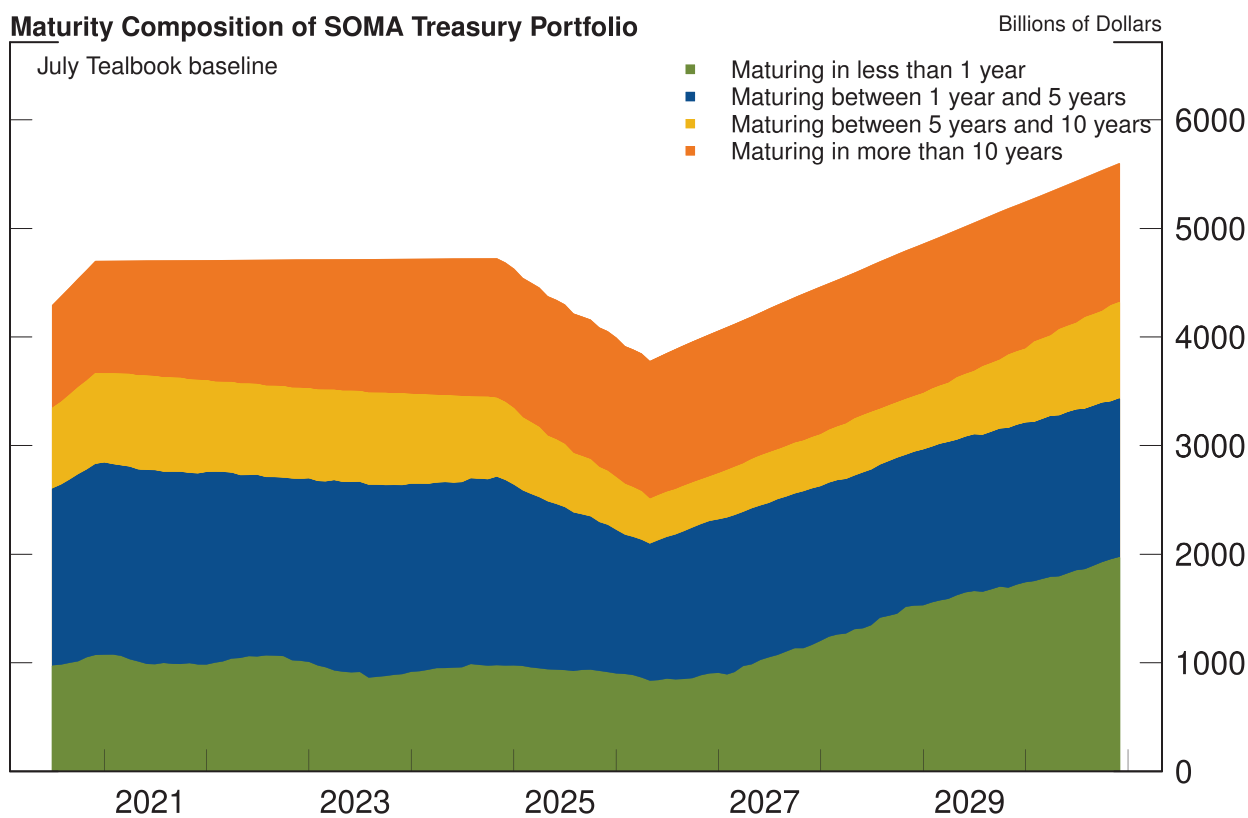
[12] The staff assumes that liability items other than reserves and currency—such as the foreign repo pool, overnight reverse repo operations, and other deposits—grow in line with nominal GDP from the start of the projection period. Currency grows in line with the staff's near-term forecasts through December 2021 and with nominal GDP thereafter.

[13] For reference, the average duration of SOMA Treasury securities holdings after the Global Financial Crisis reached a maximum of around 8 years in December 2012.

[14] The share of bills is projected to increase to 25 percent of the SOMA Treasury portfolio by 2030, up from 8 percent at the end of June 2020. Furthermore, the staff continues to assume that purchases aimed at accommodating trend growth in Federal Reserve liabilities will be directed entirely toward Treasury bills until bills constitute approximately one-third of the Federal Reserve's portfolio of Treasury securities, close to the pre-2008 composition. Once that composition is reached, further purchases aimed at accommodating growth in Federal Reserve liabilities are assumed to reflect the projected maturity distribution of Treasury securities outstanding at that time.

Projections for the Characteristics of SOMA Treasury Securities Holdings





Balance Sheet & Income

Projections for the 10-Year Treasury
Total Term Premium Effect (TTPE) of the SOMA Portfolio
(Basis points)

Date	July Tealbook	June Tealbook
Quarterly Averages		
2020:Q3	-240	-235
Q4	-237	-232
2021:Q4	-225	-218
2022:Q4	-212	-204
2023:Q4	-197	-189
2024:Q4	-183	-176
2025:Q4	-171	-167
2026:Q4	-163	-160
2027:Q4	-156	-153
2028:Q4	-149	-147
2029:Q4	-144	-142
2030:Q4	-138	-136

previous Tealbook B, the TTPE is expected to be slightly more negative.[15] This difference reflects the longer time taken for the federal funds rate to reach 1.25 percent and, therefore, for the SOMA portfolio to begin rolling off, as well as the slightly lower path of nominal GDP.[16] Over the projection horizon, the magnitude of the downward pressure exerted on the term premium embedded in the 10-year Treasury yield is estimated to diminish gradually, at an initial average pace of about 12 basis points per year. The gradual reduction in downward pressure reflects the decrease in the size of the Federal Reserve's securities holdings relative to nominal GDP over the projection horizon. At the end of the projection horizon in 2030, the TTPE of the SOMA portfolio on the 10-year Treasury yield is estimated to be about 138 basis points.

As always, it is important to keep in mind that the TTPE is defined as the effect on term premiums of only the Treasury securities and agency MBS held in the SOMA portfolio.[17] Other factors, notably the size and composition of Treasury issuance, can also have important effects on the level of term premiums.[18] However, the effects of factors other than SOMA holdings are not captured in the TTPE values reported here.

Unrealized Gains or Losses. The path for the unrealized gain position of the SOMA portfolio is lower compared with the path in the June Tealbook B, reflecting the higher projected path of longer-term interest rates in the staff's economic projection (see the top panels in the exhibit titled "Income Projections"). The SOMA portfolio was in a net unrealized gain position of about $414 billion at the end of June 2020. With longer-term interest rates projected to rise, the unrealized gain position is expected to decline over the next several years. The unrealized gain becomes an unrealized loss position

[15] Because the May Tealbook A and June Tealbook B were predicated on SOMA purchases through June 2020 and December 2020, respectively, the TTPE path implicit in the May Tealbook A was less negative than the TTPE path reported in the June Tealbook B.

[16] Based on our current methodology, the TTPE depends on the ratio of the SOMA holdings to GDP. The lower path of GDP results in a higher ratio, which makes the TTPE slightly more negative.

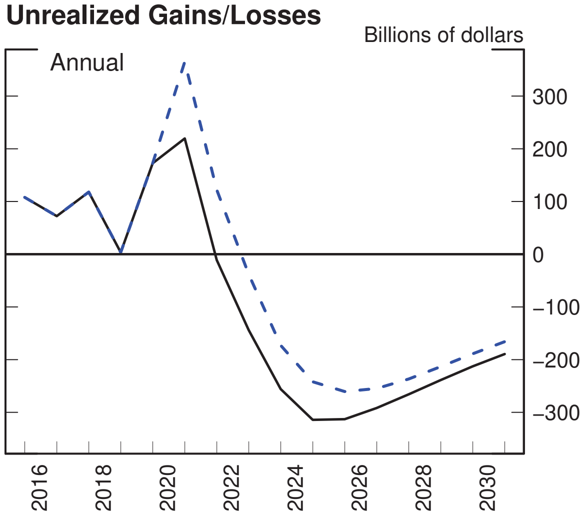
[17] While other Federal Reserve assets, including facilities and agency CMBS, are not incorporated into the TTPE model, any potential effects of these policy actions on credit spreads are embedded in the financial projections presented in Tealbook A.

[18] See the September 2019 Tealbook B box titled "Measuring the Combined Effects of the Federal Reserve's Asset Purchase Programs and Treasury's Debt Management" and the June 2020 memo titled "Treasury Issuance Following Covid-19: Implications for Interest Rates." In particular, the memo presents an alternative scenario that takes into account the effect of both the size and maturity composition of Treasury issuance, in addition to SOMA holdings, on the 10-year term premium. The results suggest that the term premium effect of SOMA holdings will be offset by Treasury's debt management in the coming years as Treasury is expected to increase the tenor of its issuance.

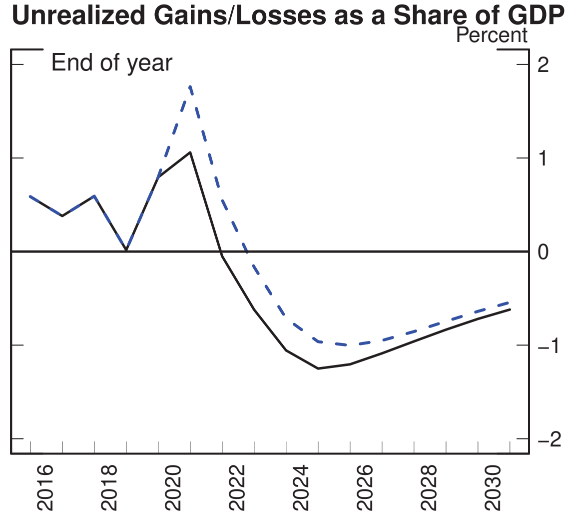
Income Projections

July Tealbook baseline — June Tealbook baseline

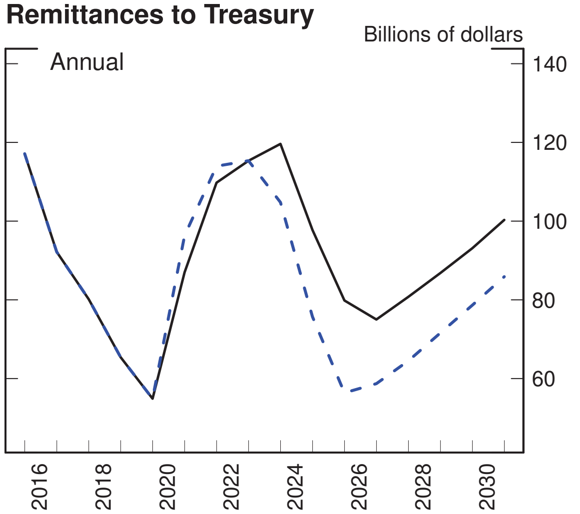
Unrealized Gains/Losses



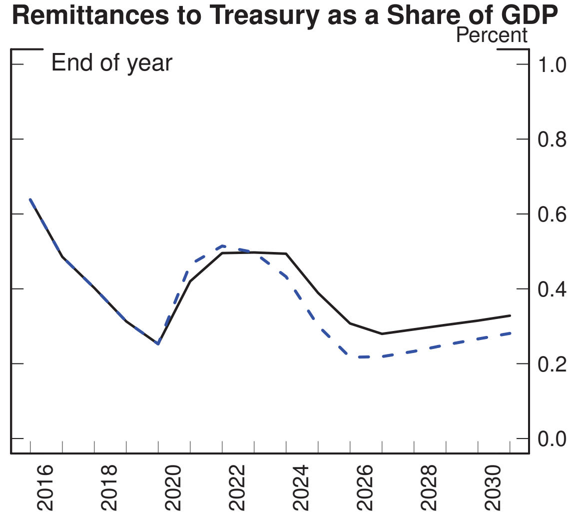
Unrealized Gains/Losses as a Share of GDP



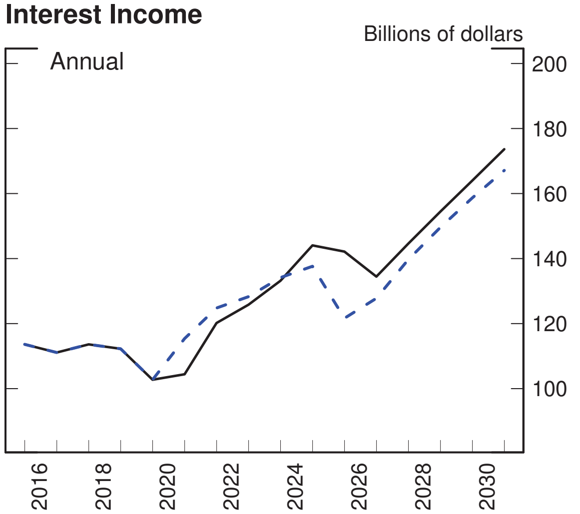
Remittances to Treasury



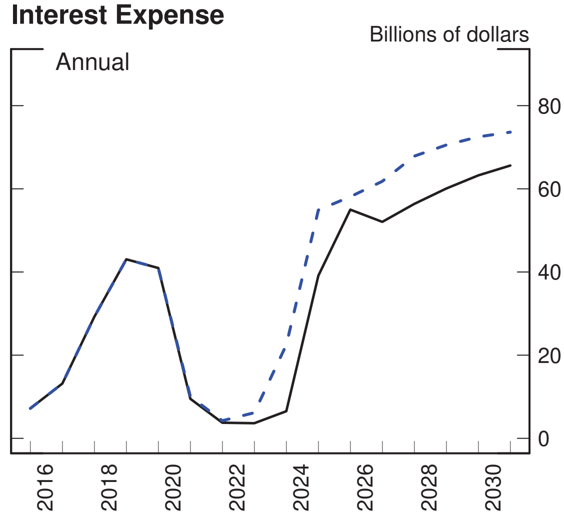
Remittances to Treasury as a Share of GDP



Interest Income



Interest Expense



around the end of 2021, and the unrealized loss position bottoms out at around $327 billion in early 2025.[19]

Remittances. Remittances are projected to be higher than in the previous Tealbook B starting in 2023 (see the middle panels of the exhibit titled "Income Projections"). Overall, interest income is mostly unchanged, with the exception of the years 2024 and 2025, when the portfolio is expected to be larger, resulting in higher interest income (see the bottom-left panel of the exhibit). More importantly, the lower federal funds rate path starting in 2023 implies a lower interest expense (see the bottom-right panel of the exhibit).

[19] See the June 2018 Tealbook B box titled "What Does It Mean for the SOMA Portfolio to Be in an 'Unrealized Loss' Position?" for an explanation of the accounting concepts underlying unrealized and realized gain and loss positions, as well as their implications for the Federal Reserve's ability to meet its obligations.

Abbreviations

ABS	asset-backed securities
AFE	advanced foreign economy
BEA	Bureau of Economic Analysis, Department of Commerce
BHC	bank holding company
CARES Act	Coronavirus Aid, Relief, and Economic Security Act
CDS	credit default swaps
CFTC	Commodity Futures Trading Commission
C&I	commercial and industrial
CLO	collateralized loan obligation
CMBS	commercial mortgage-backed securities
CPFF	Commercial Paper Funding Facility
CPI	consumer price index
CRE	commercial real estate
DEDO	section in Tealbook A: “Domestic Economic Developments and Outlook”
Desk	Open Market Desk
DFMU	Designated Financial Market Utilities
ECB	European Central Bank
EFFR	effective federal funds rate
ELB	effective lower bound
EME	emerging market economy
EU	European Union
FAST Act	Fixing America’s Surface Transportation Act
FDIC	Federal Deposit Insurance Corporation
FOMC	Federal Open Market Committee; also, the Committee
GCF	general collateral finance
GDI	gross domestic income
GDP	gross domestic product
GSIBs	globally systemically important banking organizations

HQLA	high-quality liquid assets
IOER	interest on excess reserves
ISM	Institute for Supply Management
LIBOR	London interbank offered rate
LSAPs	large-scale asset purchases
MBS	mortgage-backed securities
MEP	Maturity Extension Program
MLF	Municipal Liquidity Facility
MMFs	money market funds
MMLF	Money Market Mutual Fund Liquidity Facility
MSELF	Main Street Expanded Loan Facility
MSNLF	Main Street New Loan Facility
NBER	National Bureau of Economic Research
NI	nominal income
NIPA	national income and product accounts
OIS	overnight index swap
ON RRP	overnight reverse repurchase agreement
PCE	personal consumption expenditures
PDCF	Primary Dealer Credit Facility
PMCCF	Primary Market Corporate Credit Facility
PPP	Paycheck Protection Program
PPPLF	Paycheck Protection Program Liquidity Facility
QS	Quantitative Surveillance
repo	repurchase agreement
RMBS	residential mortgage-backed securities
RRP	reverse repurchase agreement
SCOOS	Senior Credit Officer Opinion Survey on Dealer Financing Terms
SEP	Summary of Economic Projections
SFA	Supplemental Financing Account
SLOOS	Senior Loan Officer Opinion Survey on Bank Lending Practices

SMCCF	Secondary Market Corporate Credit Facility
SOMA	System Open Market Account
TALF	Term Asset-backed Securities Loan Facility
TBA	to be announced (for example, TBA market)
TCJA	Tax Cuts and Jobs Act of 2017
TGA	U.S. Treasury’s General Account
TIPS	Treasury inflation-protected securities
TTPE	Total Term Premium Effect
WAD	Weighted Average Duration
WAM	Weighted Average Maturity
ZLB	zero lower bound

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